Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51

COMMENTS OF THE AMERICAN CONSUMER INSTITUTE

The American Consumer Institute ("Institute") hereby submits comments in response to the Federal Communications Commission ("FCC") Notice of Inquiry ("NOI") in the above-captioned proceeding.

I. INTRODUCTION AND SUMMARY

The American Consumer Institute is an independent organization founded in 2005. The Institute's mission is to identify, analyze and project the interests of consumers in selected legislative and rulemaking proceedings in information technology, health care, insurance and other matters. Recognizing that consumers' interests can be variously defined and estimated, and that numerous parties purport to speak on behalf of consumers, the work of the Institute attempts to differentiate its approach by consistently bringing to bear the tools of economic and consumer welfare analyses as rigorous as available data will allow and taking care to assure that its policy recommendations are based on analyses that reflect relevant and significant costs and benefits borne by, or created for, consumers.

We welcome this opportunity to address the content of the NOI and related considerations that should inform a National Broadband Policy (NBP). We share the convictions of the Congress and the Commission regarding the critical importance of broadband networks to our macroeconomic performance, to individual subsectors of the economy and to important cross-cutting national goals (privacy, security, environmental quality, energy conservation, and others).[1] Indeed, Broadband Policy should be regarded as a complement to traditional macroeconomic policies as instruments of national economic development. The goal of broadband for all, sensibly construed, should be afforded prime consideration in the NBP and in resolution of the issues before the Commission.

The Commission has called attention to a wide ranging and important set of issues in the NOI to be resolved as a predicate to establishment of a NBP. We cannot address them all and will focus on eight general areas, a concentration that will allow detail in some areas, but only passing reference to others.

Summary of Comments. We begin by emphasizing and supporting the Commission's recognition of the key role consumer welfare, as reflected in firms' conduct and performance, ought to play in the definition and execution of the NBP. The costs and benefits of alternative policies and courses of action under the NBP should be assessed, wherever possible, using consumer welfare as the figure of merit. Our comments emphasize that the goal of universal broadband access cannot be achieved without substantial private sector capital expenditures underwriting the enormous fixed costs of broadband networks, while providing some insights into how government action impacts private sector investment incentives. We call attention to the extraordinary tax burdens imposed by state and local governments on broadband networks and services; the pernicious effect these have on the willingness and ability of firms to invest in broadband

[1] For discussion, citations, and quantification of the economic and environmental benefits of broadband services, see Joseph P. Fuhr, Jr. and Stephen B. Pociask, "Broadband Services: Economic and Environmental Benefits," The American Consumer Institute, Washington, DC, October 31, 2007.

networks; and their inconsistency with any reasonable construction of a national policy to promote broadband access.

We suggest guidance for balancing the imperfections of markets and the well known infirmities of regulatory interventions. The goal should be fully to assess the comparative advantages of each, while spurning simplistic and rhetorical substitutes for substantive analyses of costs and benefits. While many commenters will emphasize a supply-side role for government, we believe its real advantages lie on the demand-side and, accordingly, we encourage a government wide focus on users through a variety of demand enabling initiatives.

Like our recent past, our broadband future will feature an expanding and diversifying role for mobile services. Growth in wireless functionality, applications, throughput and usage, and the concomitant expansion of competition for fixed line broadband providers, will require substantially more spectrum than has currently been assigned. The NBP should assure that the promise of, and consumer demands for, mobility not be throttled by insufficient access to the public airwaves. But, more spectrum alone is not sufficient. A variety of regulatory barriers at the state and local level slow the ability of operators to respond to consumer needs. The NBP should address these sources of delay, uncertainty and added cost.

Finally, we spell out the consumer welfare case for allowing operators to tailor service offerings and rate structures to reflect the diversity of consumer wants and accurately to address detailed consumer preferences. We address the thorny issue of rate differentiation (discrimination), and we emphasize its role in the general economy and among Internet applications providers, while calling attention to the costs of regulatory intervention to impose one size fits all constraints on operator business plans and service offerings. In short, we find that reasonable price discrimination has a long history in regulated industries; that it has been actively promoted by the Commission; that it is an indicator of rivalry, not monopoly; that its application increases consumer welfare; and

that poorly designed, if well intended, regulatory efforts to suppress price differentiation will diminish network investment and impose immeasurable costs on consumers.

II. OVERVIEW

The Recovery Act directs the Commission to consider a very broad array of perspectives in the development of broadband networks. That is both good and bad news. It is imperative that this proceeding and the Commission not get mired in the wide range of detail identified in the Notice. Our initial concern was given substance and magnified during efforts to formulate a response that reasonably reflects the issues raised in the Notice. Two of these are particularly worthy of note and provide much of the framework for the more specific focus of these comments. We emphasize these at the outset.

First, Congress emphasized efficiency and effectiveness as the basis for choosing among different mechanisms for ensuring broadband development.[2] In describing its approach to development of a plan, the Commission inquired how it: "…can identify and promote the best and most efficient means of achieving this Congressional mandate."[3] We are hopeful that the Commission can maintain throughout its focus on efficiency in what promises to be a complex and contentious proceeding, marked by countless pleas for special treatment on grounds of fairness, equity and "deservedness." While the Commission cannot and should not ignore these concerns, satisfying them all too frequently raise costs immeasurably for consumers as a whole. And, they do so in ways that are most often not readily apparent. Neither the federal government as a whole, nor the FCC in particular, has experience in economic planning. The efficiency implications of precedents and experiences drawn from planning efforts at other times and in other

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[2] The Commission NOI at paragraph 9, citing the Recovery Act § 6001(k)(2)(A).

[3] NOI, para. 12.

places are not encouraging. The exercise must be focused and in full awareness of the sheer mass of the undertaking and the implications of error in exercising it.

Several renditions of efficiency and effectiveness are possible, but the core of each is a sense of the need for the Commission to be sensitive to the short term and long term costs and benefits of different mechanisms for consumers. These costs and benefits derive from imperfections in both government processes (regulation, administration, spending, decision-making, etc.) and market processes (exchange, competition, managerial competence and behavior, etc.) which require balancing and harmonization to reflect the inherent advantages (and flaws) of each.

It is critical for the Commission relentlessly to reflect not only in the NBP, but also in its resolution of the issues in a broad range of relevant matters now pending or soon to be raised before it, Congress' clear goal of devising ways "…to ensure that all people of the United States have access to broadband capability."[4]

Second, Congress directed the Commission "to identify mechanisms that will efficiently and effectively bring about universal broadband access." In this context we believe that "mechanisms" should be construed as referring to combinations of private and public actions that, taken to together, will maximize the likelihood that public policies put in place will meet the main goals of the statute – assuring "access to broadband capability."

As a practical and unequivocal matter, the statutory focus on access to broadband capability requires the Commission to focus on investment in networks capable of rendering that access. The plain meaning of the language permits no other interpretation. Without networks there is no need for access. And without investment there can be no networks. High levels of investment and widespread access are inseparable. The Commission will rightfully consider other matters, but it cannot allow any of those to

[4] Recovery Act § 6001(k)(2)(A), para. 13.

take precedence over the necessity to create an environment congenial to investment in broadband networks and capabilities and to their timely adoption by end users.

III. THE NOTICE CORRECTLY STRESSES CONSUMER WELFARE

Consumer Surplus Is a Widely Used Measure of Consumer Welfare. Consumer welfare, also referred to as "consumer surplus," is a well-accepted concept in the economic literature with a precise definition that measures, in dollar terms, economic benefit bestowed on consumers. For the purchase of goods or services, it represents the dollar benefit calculated as the amount that consumers would have been willing to pay minus what they actually pay. Changes in public policies and regulations, the imposition of taxes and failures in the market can be calculated by measuring changes in consumer welfare. For example, if a market failure is said to exist, consumer welfare analysis can be used to measure foregone benefits to consumers, as well as assess whether any regulatory remedy produces consumer benefits that exceed regulatory costs.[5] In fact, depending on changes in consumer welfare, even imperfect markets can be better than regulation.

Efforts Should Be Made to Maximize Consumer Welfare. Elementary decision theory and commonsense counsel that objectives must be clearly defined if decision-makers are to be able consistently and competently to evaluate costs and benefits associated with alternative courses of action. Not everything can be quantified, but reasonable assessment of alternatives requires agreement on some fairly objective statement of goals, objectives and definitions. That fact is recognized in several places in the NOI. Nevertheless, the overall objective of a national broadband strategy, and

[5] Since the 1960s, cost/benefit analyses and consumer welfare measurement have been among the rigorous tools available to economist to determine whether regulations have benefits that exceed costs. This point is discussed in Clifford Winston, "Government Failure Versus Market Failure: Microeconomics Policy Research and Government Performance," AEI-Brooking Joint Center for Regulatory Studies, Washington, DC, 2006, p. 7.

various figures of merit for evaluation alternative courses of action, is worthy of discussion and debate.

Regulatory decisions have traditionally been made for the most part in the context what best serves the "public interest." Despite its wide and dispersed usage, there is of course no agreement on what that means. Rather it is a catchall that may be used to rationalize almost any decision, depending on what "interests" (groups or characteristics) are chosen and what weight is accorded each. This weighted average of good outcomes minus bad outcomes is basically indeterminate. The notion of the public interest has been aptly characterized as: "…an empty vessel, to be filled at different times with different content."[6] That flexibility is both a blessing and a curse.

We are favorably inclined regarding movement toward more specific renditions of the goals of broadband regulation to be stated in the Commission's recommendations to Congress. We prefer measures of economic welfare in general and consumer welfare in particular. Economic efficiency and welfare are often defined in policy discussions as the present value of producer and consumer surplus.[7] That standard, or a variant thereon, is often applied in antitrust cases.[8] Consumer welfare is a subset of economic welfare and we urge greater attention to it. Consumer welfare has been widely used as a metric for

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[6] Mike Feintuck, *The Public Interest in Regulation***,** Oxford: Oxford University Press, 2004, p. 27.

[7] For a clear discussion of the relationship of economic policy goals, efficiency and economic welfare, see Donald Hay, *Competition Policy, Readings in Microeconomics*, Tim Jenkins, ed. Oxford University Press, 1996, p. 74.

[8] There is some difference of opinion about how much, if any, weight competition policy makers, regulators and government planners should give to "producer surplus," which is often estimated by reference to measures of producer profits (revenues minus costs). Those differences frequently come down to discussions of how short term firms' profits may be translated into longer term consumer benefits via enhanced investment, innovation and other forms of short term market conduct that has a high probability of translating into longer term consumer welfare. For a good discussion of these and related issues about what government should be maximizing, see: Joseph Farrell and Michael L. Katz, "The Economics of Welfare Standards in Antitrust," *Competition Policy International*, Vol. 2, No.2, Autumn 2006. We also note in this context that measurement or quantitative assessment of either consumer or producer surplus is possible only for goods and services for which markets exist and for which demand and supply curves can be reasonably estimated. This condition does not permit assessment of economic welfare from things of value not traded in public markets, such as privacy, internet security, information, and others. For those "untraded" economic goods or services other measures and means must be devised.

evaluating alternative government courses of action.[9] Moreover, "Courts and federal law enforcement officials routinely invoke 'consumer welfare' as the guiding principle behind their application of the antitrust laws."[10]

The use of welfare analysis, in the context of costs and benefits, should be the standard by which the Commission assesses its national broadband strategy. Furthermore, the commission should focus on policies that undeniably improve consumer welfare and use its assessment in justifying these policies.

A Consumer Welfare Standard Should Not Be Mischaracterized or Misused. Any principled notion of the "public interest," which the Commission is statutorily obliged to further, must give substantial weight to short and long term consumer welfare. Indeed, the origins of utility regulation, and certainly the major sources of its support and growth, are based on perceived needs for consumer protection not adequately availed by markets.[11] Notwithstanding, it is generally difficult for the Commission to discern the

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[9] Robert D. Willig, "Consumer's Surplus Without Apology," *The American Economic Review*, Vol. 66, No. 4, Sept. 1976, pp. 589-597, http://www.jstor.org/stable/1806699; Tasneem Chipty, "Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry," *The American Economic Review*, Vol. 91, No. 3, Jun., 2001, pp. 428-453, http://www.jstor.org/stable/2677872 ; Jerry A. Hausman, Ariel Pakes and Gregory L. Rosston, "Valuing the Effect of Regulation on New Services in Telecommunications," *Brookings Papers on Economic Activity, Microeconomics*, The Brookings Institution, Vol. 1997, 1997, pp. 1-54, http://www.jstor.org/stable/2534754; Austan Goolsbee and Amil Petrin, "The Consumer Gains from Direct Broadcast Satellites and the Competition with Cable TV," *Econometrica*, Vol. 72, No. 2 , Mar., 2004, pp. 351-381, http://www.jstor.org/stable/3598906; and Jerry A. Hausman, "Efficiency Effects on the U.S. Economy from Wireless Taxation," *NBER Working Paper*, No. W7281, NBER, August 1999, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=198988.

[10] J. Thomas Rosch, "Monopsony and the Meaning of Consumer Welfare", Speech before the 2006 Milton Handler Annual Antitrust Review, New York City, NY December 7, 2006. http://www.ftc.gov/speeches/rosch/061207miltonhandlerremarks.pdf . Commissioner Rosch cites the following in support: Statement of Thomas Barnett, Assistant Attorney General, before the Antitrust Modernization Commission (March 21, 2006) ("This Commission should reaffirm that consumer welfare is the correct touchstone for competition law and enforcement."); Timothy Muris, "Looking Forward: The Federal Trade Commission and the Future Development of U.S. Competition Policy", Address Before the Milton Handler Antitrust Annual Review (Dec. 10, 2002) ("The Commission should forestall the greatest threats to consumer welfare. This principle captures the basic direction of FTC practice over the past two decades. . . [T]he proposition that FTC antitrust enforcement should be measured by its capacity to improve consumer welfare commands broad assent today.")

[11] Barry M. Mitnick, *The Political Economy of Regulation*, Columbia University Press, New York, 1980, Chapter III, Theories of Regulatory Origin, esp. pp. 158-163.

true nature of consumer welfare impacts of policy alternatives by looking at the representations of various special interests and consumer advocates who plead on consumers' behalf. Thus, the Commission is to be commended for its solicitations that explicitly inquire about the role of consumer welfare in formulation of a broadband plan.

The Recovery Act directs the Commission to include in the plan recommendations that are sensitive and responsive to the requirements for "advancing consumer welfare."[12] That admonition may seem unnecessary or even trite, but history frequently suggests otherwise. Consumer welfare impacts of policy alternatives are cited by advocates and by the Commission, but too often there is more form to them than substance. Consumer-based rationales for policies are frequently no more than a rationale that clouds other bases for decisions. On closer examination, the representations are made: on behalf of some consumers at the expense of others, on behalf of some considerations of consumer preferences, but without regard to others, or on behalf of short term, or immediate consumer interests, without regard to distant, collateral, indirect or external impacts. Many advocates are speaking on behalf of policies that benefit some consumers but concurrently impose costs on others, thereby raising the necessity to weigh the interests of some consumers and against those of others. No policy change impacts all consumers uniformly and most cause some harm to some consumers or in some dimensions of individual or consumer group welfare.

Like the "public interest" the term consumer welfare is both expansive and imprecise. Consumers are a diverse lot. Each has different interests based on their roles as buyers of final goods and services; suppliers of labor and capital; and, as good citizens interested in the advancement of broader economic and social objectives. Thus, while a given consumer has multiple and diverse interests, it is equally true that different consumers have different preferences and may frequently disagree on what best serves overall consumer welfare. It is a difficult task to do so, but a true consumer welfare

[12] Recovery Act § 6001(k)(2)(D).

oriented set of policies must recognize the different sources of individual consumer motivation and the differences among consumers.

The Notice seeks "…comment on how to interpret and implement this directive." We suggest the following guidelines which taken together encourage the Commission to be more demanding in its solicitations and diligent in weighing and measuring all the consumer costs and benefits of alternative courses of action.

Redistribution of Consumer Welfare is Not Necessarily Welfare Maximizing. The Commission should differentiate policies that increase total consumer welfare from those that redistribute welfare from one class of consumer to another. As the Commission proceeds to reform regulations imposed during a regulated monopoly era, many of which resulted in using regulated rate structures to tax and subsidize different classes of user, there are likely to be significant distributional effects. The Commission should consider whatever costs to particular classes of consumer might result in the larger context of the efficiency gains accruing to all consumers from rationalizing rate structures and other legacy, redistributive regulations. Ideally, the Commission's assessments should seek to maximize consumer welfare and any variation ought to be justified with a proper assessment of costs and benefits.[13]

Consider Time Distribution of Consumer Welfare Benefits. The NBP should distinguish policies that confer short term advantage to (some or all) consumers, but impose longer term costs on those same or other consumers. For example, regulatory practices that result in lower prices or subsidies for some users in the short term may well be at the expense of investment that would have produced a longer term benefit for all.[14] In such cases the present value of short and long term impacts may well be negative,

[13] The CALLS Plan is an example where rebalancing interstate rates toward more rational market price produced net welfare benefits to consumers. Stephen B. Pociask, "An Assessment of Consumer Welfare Effects of the CALLS Plan," Joel Popkin and Company, October 25, 1999 (filed with the FCC by the Alliance for Public Technologies); and Stephen B. Pociask, "The CALLS Plan Revisited: A Quantification of Consumer Benefits," March 31, 2000 (also filed with the FCC by the Alliance for Public Technologies).

[14] The issue of investment will be discussed further in Section IV.

despite the salutary short term effects. In this respect we call attention to longstanding proposals and expressions of Commission intent to rationalize intercarrier compensation and access charges, as well as universal service reform. The status quo in each of these domains confers short term value on some consumers while imposing short run costs on other consumers and substantially greater longer term costs on all consumers. We note as well that an investment orientation of the NBP as recommended and detailed below will necessarily involve intertemporal considerations.

Consider Distant and Collateral Costs and Benefits. In addressing the benefits conferred on consumers from a particular market initiative or government action, take care to address as well, and compare, the associated distant and/or collateral costs. Regulatory decisions have not only direct and immediate impacts on consumers, but also distant and collateral ones as well. Frequently, benefits are concentrated in an identifiable class or cluster of beneficiaries while the costs are diffused among consumers as a whole. The result is that beneficiaries may well represent the benefits, while those who bear the costs are not moved to do so since each bears only a small and difficult to quantify amount. Market failure alone is not sufficient to warrant regulatory intervention. A welfare analysis is needed to demonstrate that any regulatory intervention will produce an outcome better than an imperfect market.

Compare Hands-On and Hands-Off Policy Approaches. The Commission must recognize that a hands-on regulatory remedy may not maximize consumer welfare. The Commission's light regulatory touch has been in recent years a major source of the remarkable growth of investment in wireless and wired networks, as well as the resulting increases in access, usage and contributions to overall economic welfare. The FCC long ago recognized that minimizing regulations would increase private network investment and spur Internet growth and development. Nothing in the interim has changed the basis for the Commission's assessment. In forming the NBP, the Commission should adhere to the implications of its previous assessment set out below:

> *The Internet has evolved at an unprecedented pace, in large part due to the absence of government regulation. Consistent with the tradition of promoting innovation in new communications services, regulatory agencies should refrain from taking actions that could stifle the growth of the Internet. During this time of rapid telecommunications liberalization and technology innovation, unnecessary regulation can inhibit the global development and expansion of Internet infrastructure and services. To ensure that the Internet is available to as many persons as possible, the FCC has adopted a "hands-off" Internet policy. We are in the early stages of global Internet development, and policymakers should avoid actions that may limit the tremendous potential of Internet delivery.* [15]

The Commission will be encouraged by some parties, to ignore the rapid development of broadband services in a U.S. market that is half as dense as comparative Western countries and, instead, to focus on minor or imagined market failures and to re-impose the sorts of hands-on regulation of operator conduct abandoned long ago by both Congress and the Commission. The Commission should place a substantial burden of proof on those advocating a return to failed models of managed competition and regulatory intrusion. This is not to say that markets are perfect, or that there is no role for government. Far from it, both government and markets are imperfect and the challenge is to recognize their complementarity and to harmonize them in ways that recognize the comparative (dis)advantages of each. Using consumer welfare analysis, the Commission can better determine whether any government remedy could outperform any market deficiency. Without this rigorous analysis, we are not assured that these remedies leave consumers better off than in the case of a hands-off policy.

Consumer Welfare Assessment through Cost/Benefit Analysis. The Commission and the NBP can and should take into account both consumer cost and consumer benefit externalities associated with different courses of action. This is especially important to do in the broadband policy context since a major driver of concern for the same is the presence of enormous externalities from broadband investment to be realized in other sectors and forms.

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[15] "Connecting the Globe: A Regulators Guide to Building a Global Information Community," FCC document available at www.fcc.gov/connectglobe/.

The Commission sought comment on "…the interplay between consumer welfare and the market generally…" [and] "…where market competition for broadband customers falls short of providing sufficient consumer safeguards, and where must the government step in to ensure that consumers are being properly protected?" The Commission has before it a very substantial and relevant record on these matters derived from comments in other proceedings and from the Commission's own analysis and declarations. While other sections of these initial comments provide more detail we believe the Commission's accord great weight to its own analyses of the benefits of competition and the contributions of market forces to consumer welfare. These apply, with minor if any exceptions, to current and emerging markets for broadband access.

Tailoring Policy to the Presence of Externalities. There are significant externalities (both costs and benefits) associated with broadband networks, and these by themselves imply a measured and well considered role for government. They do not however warrant substitution across the board of government fiat for private initiative. Cost externalities imply that regulatory burdens placed on some networks, operators, or users will burden others who share these common infrastructures. The existence of external benefits warrants affirmative government actions, well considered and specifically tailored, to encourage investment, access, and use beyond those levels that might be dictated by the sum of individual consumer choice. Again, the implied government remedial action is not more regulation of operator market conduct or substitution of government determined rate and service structures, but rather the implication is that government ought to find ways, as suggested in the Notice, to make the environment congenial and attractive to investors, while also taking reasonable measures to bolster demand.

Beyond this "externality-driven" government participation we want to call attention to two other areas of concern for the efficacy of markets. The first deals with a market deficiency (information disclosure) that justifies government action and the second (market concentration in the supply of access) deals with allegations of market

failure that in our view have no merit. We address the first in some detail below (Section V) and focus briefly here on claims that competition in the provision of broadband access is, because of market concentration or ambiguous international rankings, insufficient and for that reason a basis for re-imposing core elements of common carrier regulation of rates and services.

Focus on Market Conduct and Performance, not Structure. A handful of parties have repeatedly called the Commission's attention to a) the limited number of options consumers have for choosing a broadband supplier and b) the assorted international rankings of "broadband" success. The first typically contains reference to duopoly or more often "cozy duopoly" in characterizing the broadband access market and providing the lion's share of advocates' rationale for reimposing common carrier type regulations. [16] The Commission's economists are of course aware of the conclusions of numerous industrial organization experts and studies holding that market structure alone is an unreliable indicator of the efficacy of competition, and that competent analysis requires looking instead at the record of market conduct and of actual market performance, both of which address matters of interest to consumers – prices, progress, innovation, investment, service diversity, functionality, and adaptations to each of these over time.[17]

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[16] The Consumer Federation of America, Consumers Union and Free Press have been leading advocates of the view that current market structure is the source of market failure and a rationale for reimposing common carrier regulation. Thus, they characterize their comments in an earlier FCC proceeding as elaborating on the "…demonstrated failure of the cozy duopoly model to achieve the goals of the 1996 Act," In the Matter of WC Docket No. 07-52 Broadband Industry Practices, Comments Of The Consumer Federation Of America, Consumers Union And Free Press, pp. 3-4.

[17] For a clear and detailed discussion of the well known "structure, conduct, performance" (SCP) frame of reference for assessing market competition among firms, see Donald A. Hay and Derek J. Morris, *Industrial Economics and Organization: Theory and Evidence*, Oxford University Press, especially Chapter 8, pp. 204-261. They conclude that the complexities involved undermines "…the direct causal chain from structure to performance…" And that from a policy perspective, "…emphasis would switch from structure to conduct as a basis for [regulatory] intervention." (p. 260) Also, "...the relationship between industrial structure and price setting over times remains very unclear…it is difficult to avoid concluding that, if any such links do exist, they are far from obvious and unlikely to be powerful…Industrial structure may have an important influence on price procedures….but it does not seem to play a central role in the pattern of price changes that develops through time." (p. 200)

The author of a widely used industrial organization text concluded: "Economists have developed literally dozens of oligopoly pricing theories – some simple, some marvels of mathematical complexity. This proliferation of theories is mirrored by an equally rich array of behavioral patterns actually observed under

The Commission has asked for evidence of the current and expected performance of these markets and we expect to review carefully what is provided by advocates with access to the relevant data. That said, our preliminary view is that there will be no basis in the broadband operators' performance measured by data on investment, prices and price changes, changes in functionality, service quality, network expansion and other indicia of the effectiveness or workability of competition as proxies for the need for hands on regulation of market conduct.

The Commission Should Target Unserved Markets. For capital-intensive network economies, it may well be expected that the market can only sustain a handful of facility-based broadband providers that permit effective competition, and economies of scale and scope that permit lower consumer prices. But, there are markets that may, given today's technology, be fortunate to sustain only one competitor. With this in mind, the Commission should recognize that helping unserved markets should be an important consideration, rather than trying to achieve atomistic markets where competition currently exists. The consumer welfare economics is pretty straightforward on this issue. The law of diminishing marginal utility (or decreasing marginal rates of substitution in indifference curve analysis) makes clear that increments of choices add value but in diminishing amounts. Thus the first option is more valuable than the second, the second more valuable than the third, the third more valuable, and so on.

Abstracting from the difficulties of making interpersonal utility comparisons in which some consumers have stronger preferences than others, this law indicates that the increment to total economic welfare by offering all consumers the first choice before

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oligopoly. Casual observation suggests that virtually anything can happen…." F. M. Scherer, *Industrial Market Structure and Economic Performance*, Rand McNally, Chicago, Ill., 1970, p. 131.

An exhaustive survey of the literature on oligopoly market structure began with the following: "Before embarking on the analysis, it is best to provide the reader with a word of warning…there is no single theory of oligopoly… I do not expect oligopoly theory... to give tight interindustry predictions regarding the extent of competition or collusion." Carl Shapiro, "Theories of Oligopoly Behavior", *Handbook of Industrial Organization*, R. Schmalansee and R. Willig (eds) p. 333. In summarizing his review of the literature and long litany of the assumptions and outcomes of dozens of oligopoly models, Shapiro calls attention to the forgoing caveat and then concludes: "What we are most in need of now are further tests of the empirical validity of these various theories of strategic behavior." (p. 409)

depleting the budget to offer others a second or third choice will lead to greater welfare. In simpler terms, how do we rationalize providing some with two, three or more choices, when others have no choices. Therefore, a NBP should first consider markets that are unserved or offered inferior service by a single operator, because the potential consumer welfare benefits in these markets are the highest.

IV. THE NOTICE CORRECTLY RECOGNIZES THE PRIMACY OF INVESTMENT AND INVESTMENT INCENTIVES IN MEETING CONSUMER NEEDS

In the context of a discussion of its role in fostering development of broadband networks and services, the Commission inquired: "What is the best way to attract risk capital to broadband infrastructure projects?"[18] A full answer is beyond our scope here, but the basic outline of a response includes a) an awareness by Commission financial analysts and decision makers of the nature of private sector investment incentives and barriers to private sector investment in infrastructure, b) the effect of various FCC regulations and processes on the investment incentive structure and c) a willingness to reflect these considerations in all rulemakings related to the activities of firms comprising the internet value cluster, including, but not limited to, network access and service providers. In evaluating this, the Commission should attempt reasonably to assess the welfare effects of its regulations on the willingness and ability of operators to invest in broadband networks.

The Commission sought comment on how to interpret and implement a requirement in the Recovery Act that the Commission include in its recommendation "…a plan for use of broadband infrastructure and services in advancing . . . private sector investment."[19] In that context, the Commission asked: "…how can Congress or the Commission encourage private sector investment in broadband technology and the

[18] NOI, para. 37.

[19] Recovery Act § 6001(k)(2)(D).

services and economic activity that they support?" And, also: "What can we do to encourage private sector investment in broadband apart from loans and grants?"[20]

The simplest answer is that the Commission should a) recognize that its rules and processes have an enormous impact on firms' incentives to invest, types of investment made, and the sources of funds to underwrite those expenditures, as well as b) take great care to reflect that understanding in its decisions, orders and rules. In view of the importance of private sector investment to achievement of the main objectives of a coherent NBP, it is imperative for the Commission and its analytical staff to understand how its decisions and processes impact the pace and structure of private investment. Network operators make numerous decisions about the sources and uses of cash, all of which have implications for the level and structure of investment in broadband networks.

Substantial Private Capital Will Be Required. Progress toward and satisfaction of the goal of universal access to broadband facilities and services will require an enormous amount of capital expenditures for network investment. The precise amount can only be estimated and will be contingent in significant part on government policies and practices forthcoming from this proceeding. Nonetheless, back of the envelope calculations for a variety of development scenarios indicate that required new, capital expenditures will be on an order of magnitude of the depreciated book value of all telecom networks now in place as a result of previous investments.[21] The amounts needed, the history of

[20]NOI, para. 95.

[21] The amount of capital required depends in substantial part on the outcome of this proceeding as it pertains to key definitions, goals, and timetables. Annualized costs will vary with technologies, configurations of different delivery platforms, network speed/bandwidth/functionality, the practical meaning of *ubiquitous* or *universal*, and the timeframe for achieving these goals. Thus, resolution of the issues and questions raised in paragraphs 14-28 of the NOI (Establishing Goals and Benchmarks) will define more clearly the parameters of required capital. Under any reasonable circumstances, nevertheless, the capital requirements will be enormous. For illustrative purposes, suppose there are 40 million "underserved" U.S. households and the average capital expenditure to reach them is $1,500 per household. That amounts to $60 billion or eight times the BTOP program being administered by NTIA and RUS. Depending on a) the definition of underserved and b) the type of technology and network configurations involved this may be a very conservative amount. Bernstein Research analysts have estimated that it would cost more than $4,000 per household to extend the FIOS fiber network to rural America. They calculated that a fiber to the premises (FTTP) network started in 2005 and connecting more than 30 million customers in the 20 most populous states would cost about $45 billion to build. Building on that number and

development of legacy networks that will evolve into broadband capabilities, and the pace of achievement of universal voice telephone or cable television services make clear that it will take a long time to achieve the universality goal, but also that the time needed varies inversely with annual capital expenditures as driven by incentives and willingness of private and public sources to make the necessary financial sacrifices.

Private Investors are Risk Averse and Wary. Financial investors in private sector firms likely to play a key role in the evolution of universal broadband access are not wildly enthusiastic about shareholder value in such networks. Some are downright skeptical. They call attention to financial and market risk, the enormous sunk and fixed costs involved, uncertainty about earnings, and indications that consumers will spurn use of broadband networks for reasons not related to price and service quality.

Investment analysts who advise equity investors are well informed about the presence and potential impact of regulatory intervention in the broadband market place. They are best described as cautious and wary of government intervention in ways that might hinder broadband providers' prospects for achieving adequate returns, through regulations that add to risk and uncertainty while diminishing prospects for generating the enormous cash requirements necessary to amortize the huge fixed and sunk costs of broadband network investment.[22]

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adjusting it to reflect service to the remaining 80 million households (while extending that network to the other 80 million households and baking in some modest competition from other technologies, platforms or providers) would raise the total investment bill to $350 billion or more. (Bernstein Research, "Fiber: Revolutionizing the Bells' Telecom Networks: A Joint Bernstein Research-Telcordia Technologies Study," New York, May 24, 2004 (*Bernstein Black Book*). Less expensive or intensive technologies and networks would entail less, of course, but leave unchanged the basic conclusion that enormous capital investments will be required.

[22] Several have expressed their reservations about the business case for broadband investment as well as the potentially negative role of government regulation of broadband networks. See Full Senate Committee Hearing on Net Neutrality, Wall Street's Perspective on Telecommunications," March 14, 2006. http://commerce.senate.gov/hearings/witnesslist.cfm?id=1 705.

A hearings summary and commentary is available at: Ted Hearn, Analysts Question Bell Investments, *Multichannel News,* March 14, 2006. Online at: (http://www.multichannel.com/article/CA6316081 .html?display=Breaking+News).

Financial analysts' and investors' views about broadband investment by telephone and cable companies vary from lukewarm to negative.[23] None are enthusiastic about the payoff to shareholders and creditors who express concerns about expected earnings, earnings growth and risk from construction of broadband networks.[24] All are implicated from an investor's point of view during consideration of the enormous capital outlays involved in building next generation fiber networks. Most analysts are very cautious and appear to be skeptical, while some are downright hostile to the idea of massive telco or cable company, high risk capital expenditures. Even the most optimistic are cautious.

Regulations Can Encourage or Discourage Investment. As indicated above, investors are wary of the impact of government on the business case for broadband investment.[25] Government plays a critical role in shaping investment incentives and disincentives.[26] Both availability and adoption depend on governments putting in place the correct incentives and, reciprocally, taking care to eliminate existing disincentives in legacy regulatory practices. Impacts of regulation on investment are more than theoretical matters. Telecom policy analysts have estimated regulatory disincentives to

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[23] See "Full Senate Committee Hearing on Net Neutrality, Wall Street's Perspective on Telecommunications," March 14, 2006. http://commerce.senate.gov/hearings/witnesslist.cfm?id=1705 A hearing summary and commentary is available at: Ted Hearn, Analysts Question Bell Investments, *Multichannel News*, March 14, 2006. Online at: (http://www.multichannel.com/article/CA6316081 .html?display=Breaking+News).

[24] "There is a high degree of skepticism that the substantial investment underway at the [phone companies] to deliver broadband networks to the home will deliver a satisfactory return on the incremental investment," said Luke Szymczak, vice president of JPMorgan Asset Management.

[25] Investors dislike policy upheavals in Washington that distract them from focusing on market fundamentals, according to Kevin Moore, wireline telecom analyst at Wachovia Securities. "We have enough to worry about in considering the rapidly changing competitive and technological environment. In other words, we want regulatory stability and certainty," Moore said. (Quoted by Hearn at p. 1.)

[26] For a discussion of the relationship between regulation and incentives for firms to take risks and invest, see: Larry F. Darby and Joseph P. Fuhr Jr., "Investment Incentives and Local Competition at the FCC," *Media Law & Policy*, Vol. IX, No 1, Fall 2000, in particular the discussion at pp. 12-15 and accompanying reference in footnotes 17-23. See also, Larry F. Darby, "Regulation Matters in Investment and Efficiency in Telecommunications," *Telecommunications Reports Journal*, Vol. 1, No. 2, September October, 1997, p.10 for a matrix linking classes of regulatory action and impacts on investment incentives (risk, return, growth and real options).

investment and several have found negative effects.[27] Regulations, while well-intended, may lead to delays in bringing products to market, slow innovation, create inefficient pricing and build in regulatory lag – all of which reduce consumer demand and welfare, which in turn may negatively affect the business case for investment.[28]

While policy advocates look back and at the current market for indicators of competition, investors must look at future time horizons sufficient to recover their investment. Given that a) the bulk of the investment must be made before returns begin to be generated and b) that expected rates of market penetration and new service adoption will delay such returns, investors must be sensitive to what the market will look like in the five to ten year timeframe and beyond. Regulatory clarity, certainty and the reliability of past regulatory commitments are highly valued by investors.

The importance of investor attitudes about the broadband buildout can scarcely be overemphasized, since, quite obviously, without investment there can be no consumer welfare from next generation broadband networks. But, an equally important consideration in the current debate may be more subtle. Specifically, investors have a big stake in the resolution of net neutrality issues and particularly in the outcome of the debate over who can be charged, by what principles and by whom – that is, in resolution of the set of network access pricing issues raised in the context of net neutrality, open networks and in particular resolution of uncertainties about the ability of operators to

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[27] Jerry Ellig, "Costs and Consequences of Federal Telecommunications and Broadband Regulations," Mercatus Center, George Mason University, February, 2005 and references cited there. ("The existing research on competition suggests that unbundled network element regulation encourages entrants to use unbundled network elements, but discourages them from building their own facilities, p.51) Robert Crandall, *Competition and Chaos: U.S. Telecommunications since the 1996 Telecom Act*, Brookings, Washington, DC, 2005, Chapter V. Robert W. Crandall, Allan T. Ingraham, and Hal J. Singer, "Do Unbundling Policies Discourage CLEC Facilities-Based Investment?" *Berkeley Electronic Papers, Topics in Economics and Policy Research*, 2004, p. 20.

[28] For example, the regulatory delays associated with cellular services and voice-messaging telephone services result in an annual welfare loss to American consumers of $51 billion. See, Jerry Hausman, "Valuing the effect of Regulations on New Services in Telecommunications," *Brookings Papers on Economic Activity, Microeconomics*, Brooking Institute, Washington, DC, 1997, pp. 1-38.

provide different services, service packages and rates to satisfy the unique preferences and practices of different classes of user.[29]

In recognizing the link between investment and consumer welfare, it is paramount that the Commission consider consumer welfare analysis in its assessment of broadband regulations. Litan and Singer estimated that prohibiting intelligent traffic controls and quality of service controls would raise consumer prices and lead to consumer losses totaling $5 billion per year.[30] Darby found that prohibiting multi-side market pricing Internet regulations would impede investment, raise consumer prices and decrease consumer welfare by $24 to $32 billion over 10 years.[31] Sidak evaluated and modified Darby's figures, estimating that the welfare loss to be in the range of $3.4 to $7.4 billion per year.[32] Another study found that multi-sided pricing in the broadband market could yield benefits as high as $69 billion over the next 10 years and that net neutrality regulation could result in a 60% decline in broadband subscribership in lower-income households.[33] The Department of Justice reviewed several of these consumer welfare studies and agreed that such regulations would reduce consumer welfare.[34] Again, we urge the Commission to use welfare analysis as a principal means for assessing the costs and benefits to consumers of alternative courses of action.

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[29] We discuss this in detail in Section X.

[30] Robert E. Litan and Hal J. Singer, "Unintended Consequences of Net Neutrality Regulation," *Journal on Telecommunications & High Technology Law*, Vol.5, March 2007, p. 533.

[31] Larry F. Darby, "Consumer Welfare, Capital Formation and Net Neutrality: Paying for the Next Generation Broadband Networks," Darby Associates, June 6, 2006, p.2.

[32] J. Gregory Sidak, "A Consumer Welfare Approach to Network Neutrality Regulations of the Internet," *Journal of Competition Law & Economics*, Oxford Press, Vol. 2 No.3, 2006. p. 465.

[33] Stephen Pociask, "Net Neutrality and the Effects on Consumers," The American Consumer Institute, May 9, 2009.

[34] United States Department of Justice, "In the Matter of Broadband Industry Practices" WC Docket No. 07-52, *Ex parte* Filing," Sept. 6, 2007, in particular Section II and footnotes 25-27.

V. THE EFFICACY OF CONSUMER CHOICE DEPENDS ON FULL DISCLOSURE OF ACCURATE INFORMATION

Markets and regulation both work best when consumers are fully and accurately informed. Throughout these comments we have emphasized the importance of assuring that consumer preferences and choice have major roles in a NBP. We emphasize here that the implicit assumption underlying the value of consumer choice in creating economic welfare is that consumer have accurate information about the true costs of their choices and the ability of services to meet their personal needs and more particularly the often idiosyncratic characteristics of their preferences. Incomplete, inaccurate or otherwise flawed information leads to inefficient choices and undermines consumer sovereignty and the case for markets.[35]

The information problem is particularly acute when suppliers have, but fail to disclose to users, information that materially impacts consumers *ex ante* assessments of the "value propositions" implied by rate and service terms. Such "asymmetric information" is a prime source of market failure that is properly addressable by regulatory efforts to protect consumers by either providing information or by requiring suppliers to do so.[36]

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[35] The implications of imperfect information informing consumer choices have been intensively studied. An extensive review and summary is beyond our scope here, but we can recommend a handful of studies and the references they cite. See, Joan K. Lewis, Teresa Mauldin, "Returns to Investments in Information: Can Investments Reduce Bad Purchase Experiences of Consumers?" *Journal of Consumer Studies and Home Economics*, Vol. 20 No.2, 1996, pp.183–199. The authors examine the impact of consumer information, information sources, information acquisition costs, and consumer demographics on "bad purchase" experience. The results suggest that age, education, extent of social contacts with relevant information and others were relevant. See also, George B. Sproles, Loren V. Geistfeld, and Suzanne B. Badenhop, "Types and Amounts of Information Used by Efficient Consumers," *Journal of Consumer Affairs*, Vol. 14, Issue 1, June 1980, p. 37. The paper examines the efficiency of consumer decision-making as indicated by the types and amounts of informational resources utilized. They classify consumers in three groups ranked by their relative efficiency in making optimal choices in the context of their wants/needs/preferences and the information available about alternatives. Taken together these papers indicate that inadequate consumer information leads to loss of consumer welfare; that information acquisition by consumers is often costly; and, that investing in better information can lead to increased consumer welfare.

[36] See A. Postlewaite, "Asymmetric Information", *Allocation, Information, and Markets*, John Eatwell, Murray Milgate, Peter Newman, eds., The New Palgrave, WW Norton, NY and London, 1989, pp. 35-38.

The Commission inquired: "Would consumer welfare be enhanced by more disclosures to customers of any limitations that providers place on broadband services, including limitations that may be placed on service on a temporary or intermittent basis, to deal with network congestion or for other reasons?" The short answer from a consumer perspective is unequivocal: Consumers will benefit from full disclosure of information regarding limits or options or risks associated with the services they are considering purchasing. Such disclosures are particularly important in the context of the requirements of carriers to manage traffic flows over proprietary networks, although such disclosures should not involve any requirements to provide proprietary network techniques.

The Commission should continue efforts to assure informed consumer choice of services and among network operators. That has been the focus to date, largely in the context of the Comcast practices challenged by the Commission. But there are good reasons for government to be equally committed to assuring that consumers are fully informed about effective rates, terms and conditions for non-carrier services – that is, applications, services, devices and other complementary products/services that taken together provide consumers with a "total broadband experience." This requirement need not and should not be the basis for intrusive regulation of suppliers in these markets. Rather, the strategy might well encourage development by relevant industry sectors of principles or best practices to be followed by individual suppliers. Some potential candidates for such best practices development include those that address privacy and security issues; and those that allow consumers to make fully informed choices about the expanding array of equipment options.

VI. THE NOTICE CORRECTLY EMPHASIZES THE DEMAND-SIDE OF BROADBAND MARKETS

Public debate and commentary about the need for a national broadband strategy has to date been dominated by supply-side considerations. This, notwithstanding the fact

that penetration rates (the ratio of the number households purchasing broadband access to the number of households passed by broadband networks) suggests that many consumers are not subscribing to broadband services already available to them. Approximately only two-thirds of Americans have computers in their homes.[37] The fact of the matter is that: "If we build it, they may not come!"[38] Survey data from the Pew Foundation give substance to claims that deficiencies related to demand, not supply factors like price and availability, account for the largest percentage share of non broadband subscribers. Inadequate demand traceable to an array of causes account for 68% of those without broadband at home, while only 32% of those surveyed cited high price or lack of availability or no access to a computer.[39]

The plain language of the statute compels a demand-side focus for the NBP. The Commission has clearly recognized as much: "…the Commission must include a detailed strategy for achieving affordability of such service and maximum utilization of broadband infrastructure and service by the public."[40] The language makes clear that supply-push strategies must be complemented by demand-pull strategies that focus on fostering demand-side attributes that will enable or incent higher rates of broadband penetration where it is, and as it becomes, available.

The emphasis on demand is welcomed, including steps to increase computer penetration and improving computer literacy. Demand-side stimulus has several heretofore largely neglected, but quite beneficial, impacts. First, stimulating demand will permit wider distribution of the huge fixed and sunk costs of networks. The reduction in average fixed costs will permit lower rates to all users, which will in turn lead to

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[37] Supporting data from: John P. Horrigan, "Stimulating Broadband: If Obama Builds It, Will They Log on?" Pew Internet & American Life Project, January 21, 2009. Available at: http://pewresearch.org/pubs/1085/stimulating-broadband.

[38] John Horrigan, "Obama's Online Opportunity II: If you build it, will they long on?" Pew Internet & American Life Project," January 2009.

[39] Ibid, Table 2.

[40] NOI, para. 9.

secondary increases in penetration and usage. Secondly, the direct consumer welfare increments from demand stimulation will be magnified by widely recognized network externality effects leading to proliferation of indirect benefits from greater connectedness. Third, the increase in subscribership from these two forces will create incentives and opportunities for other suppliers in the Internet value cluster – applications providers, equipment suppliers, content creators and others – to innovate and add new services that will be attractive to existing and new users.[41] These new users in turn will stimulate more development in the value cluster and thereby manifest a form of a "virtuous circle" of development and stimulation.

Increases in demand from broadband stimulus efforts will impact broadband platforms suppliers in beneficial ways as well. Increases in demand will increase unit sales which, given the relatively low incremental cost of supplying additional households over existing networks, will generate free cash, which can be used for additional investment. That and related effects will in turn help offset investor skepticism about the broadband investments discussed in more detail above.

Finally, it is worth noting that direct demand stimulus through programs with their initial and primary impact on users will, in contrast with direct supply-side stimulus, ensure that consumer preferences are directly reflected in market exchange processes.

Government's role on the demand-side is paramount. And, fortunately, is likely to be less contentious in its implementation than on the supply side. Demand enabling and stimulating measures are in substantial part within the province of direct government action or in the actions of publicly funded institutions.

Informing the NBP with Accurate Assessments of Consumer Preferences. The first and foremost implication for government is to assure that the strategy (plan)

[41] These "bandwagon" effects are different from, and accumulate beyond, standard externalities. They are often ignored in policy discussions. For an excellent discussion that is very much on point here, see Jeffrey H. Rolfs, *Bandwagon Effects in High Technology Industries,* MIT Press, Cambridge, Mass, 2001, especially Chapters 2: "Bandwagons: How They Work;" and Chapter 3: "Bandwagon Demand."

submitted to Congress is well informed by an accurate sense of what consumers actually prefer, the options they would like to have, and the choices they would make were the decisions left to them rather than being made by government.

The Commission's Notice raises a number of questions that directly implicate consumers' preferences, but which are likely to be answered by third-parties with mixed agendas, but nonetheless on behalf of consumers. Possession by the Commission and others in government of accurate information about such things as consumer preferences among, say, a) more choices of access providers, b) more vs. less bandwidth, c) more vs. less functionality or reliability or general quality of service, d) mobility, e) price, and others are absolutely critical, if the broadband strategy is going to succeed. The alternative of systematic guesswork about what consumers want is not at all attractive.

While the Commission can focus the direction of the strategy and bolster a commitment to a NBP, it should be mindful not to force homogenized solutions on a diverse population. In the end, consumers should have a choice on whether to subscribe at all and at what speeds. Consumers can meet their online needs and maximize welfare only through operator efforts to segment markets, differentiate services, and tailor offerings to diverse characteristics of consumer preferences.

VII. THE NOTICE CORRECTLY EMPHASIZES THE NEED TO BALANCE PRIVATE ENTERPRISE AND ENLIGHTENED PUBLIC POLICY

The Notice in several places signaled the Commission's interest in the comparative efficacy of market processes and regulatory processes and in private versus public incentives and constraints as elements of a long term national broadband strategy. The Commission specifically inquired about: "…the role of regulation in broadband infrastructure and service markets, as well as its efficacy and efficiency in achieving the important policy objectives contemplated by Congress…"[42] It put the issue in context by

[42] NOI, para. 37.

seeking comment on "…on how effective and efficient existing mechanisms have been, whether they are marketplace mechanisms, or activities of governmental or non-governmental entities that supplement or complement the market mechanisms."[43]

The issue is not simply a matter of regulation vs. deregulation; of free market forces vs. government command; of liberalism vs. conservatism; or, of right vs. wrong, although some prefer to couch the debate in these terms. Rather the challenge is one of blending, mixing, harmonizing, or optimizing the strengths of two very different institutions, while minimizing the impact of imperfections in each.

Markets and Government Actions Both Imperfect. Much of the debate over regulation vs. markets reflects a degree of polarization that masks the indisputable fact that both markets and government regulations manifest significant imperfections as means for pursuing public policy goals in general and our broadband objectives more specifically. Advocates for regulation scoff at indicators of the success of markets to date, while some on the other side proceed as if broadband markets are perfect and can be trusted completely with no government oversight or prospect of intervention. Both are off the mark. Markets are imperfect, but so to are government institutions as instruments for meeting the preferences of taxpayers and consumers. Doubters of either proposition have not been reading the newspapers or watching, wherein failures of all sorts and in all corners have recently been catalogued in great detail.

Debates over the extent and types of government intervention in telecom markets have traditionally started with consideration of the adequacy of markets and, more specifically, on different kinds and severity of "market failure." Having identified such failure, advocates of government action have used them to support and inform varied government actions designed to offset them.

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[43] NOI, para. 36.

Regulation of market structure and market conduct in telecommunications continues to be justified by claims that markets cannot ensure "adequate" levels of market performance and that government action is needed to offset market failures. The problem with this syllogism is that market failure is universal. Markets always reflect conditions unmet or needs unsatisfied. Like beauty, market failure is very much in the eye of the beholder.

Finding market failure is not difficult. It is everywhere.[44] But, it is not sufficient to warrant government action, especially when, as is always the case, remedial actions by government themselves manifest important externalities, transactions costs and other indicia of institutional inefficiencies. Government action is not always successful.[45]

Policy determinations – whether to offset or complement market activities with government action -- have been made historically on the basis of asymmetric valuations of the merits of market forces vis-à-vis government action. There has been a pervasive and clear tendency to weigh "ideal" government execution against "real" market performance; or, to compare ideal markets with the reality of government action. The performance of markets is too often evaluated by comparing their operation and

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[44] Thus, "...an analyst in search of externalities and market failure can find them anywhere, [and thereby provide] a universal justification for any sort of government intervention that he or she might want to promote." Richard O. Zerbe, Jr., *Economic Efficiency in Law and Economics*, Edward Elgar, Cheltenham, 2001, p. 168. See also Chapter One for an informative, and relevant, history of the notion of economic efficiency and economic welfare maximization.

[45] A spokesman for leading consumer organizations summarized the 1996 Act and implementation by the FCC of regulation of access charges as follows: "The parade of horribles with which you have been presented goes on and on and I will not regurgitate them in detail today…I believe that we have been brought to this sorry condition because: (1) the 1996 Act tried to do the impossible in some markets…; (2) the Federal Communications Commission (FCC) and the antitrust authorities mishandled the introduction of competition in markets where it was sustainable…; and (3) the FCC misread the 1996 Act in other markets, undermining and threatening competition that actually existed (e.g. Internet access and services)." Testimony of Mark Cooper, Director of Research, Consumer Federation of America on behalf of Consumer Federation of America, Free Press, and Consumers Union, before the United States Senate Committee on Commerce, Science and Transportation regarding Competition and Convergence, March 30, 2006. See also, Gordon Tullock, Arthur Seldon, and Gordon L. Brady, *Government Failure: A Primer in Public Choice*, Cato Institute, Washington, DC, 2002, especially Chapters 9 and 10 addressing the Internet and Telecommunications Policy more generally. Taken together these references suggest that government failure is recognized at both ends of the political spectrum.

outcomes in the real world to those found only in textbook models of "perfect competition."

Need to Identify and Recognize What Government Does Best. In balancing government and markets, it is important to identify what each does well. Government can do well by articulating national goals and then taking care to assure that its actions are consistent with those goals. The history of regulatory attention to requirements for promoting universal telephone service is instructive in this regard. It is fair to say that most decisions in the common carrier area for several decades were infused with consideration of decisional impacts on local telephone rates and penetration. The government should take care to create structures of incentives and constraints that encourage good market conduct and punish bad. It can usefully create favorable tax climate by not taxing, through other programs, what it is trying to encourage. The government can help eliminate barriers to demand for broadband networks by fostering computer literacy and availability. Government should be aggressive in enforcing competition laws designed to protect consumers, while also ensuring that consumers have full access to information about rates and terms of service. This list is not intended to be exhaustive, but rather its purpose is to illustrate the kinds of roles that only government can play and also establish the importance of starting with a candid assessment and identification of both the successes and limitations of government in various roles.

Government does less well in other aspects. As a byproduct of the requirements of good administrative procedures, regulatory processes tend to be slow; conflict resolution is done incrementally; outcomes are often inconclusive and lead to further deliberations; transactions costs are often substantial; and grounds for decision-making are not always known or consistent. The result may be substantial uncertainty in the private sector about matters critical to private investment and other elements of market behavior.

Regulation is Not Free. There are significant costs associated with its exercise.[46] Given the flux of technology and uncertainties in the current marketplace, regulation of rates and services of access providers, or others, will be associated with unforeseen and unintended outcomes which invariably will be costly. Rate regulation is sure to introduce delay, increase uncertainty, add to investment risk and thereby reduce both the rate and likely amount of capital formation on which new services and consumer welfare depend. Given the ambiguities and complexity of measuring cost in a dynamic Internet services environment and the lags and imperfections in measuring costs, cost-based regulation may be the source for substantial dynamic inefficiency and waste. Furthermore, the cost of *ex ante* regulations, such as some net neutrality regulations and those that anticipate market problems rather then seek to remedy problems, can be very costly to society and should be avoided.[47] By a consumer welfare analysis, these prospects must be evaluated by the Commission and given considerations as offsets to the benefits promised.

VIII. RECOGNITION OF THE INCREASED ROLE OF WIRELESS BROADBAND

The Commission went to great lengths in the Notice to solicit direction on how best to promote greater deployment of wireless service, including steps to eliminate disincentives to serve or invest in rural areas, and to help reduce the costs of market entry, network deployment and continuing operations.[48] And, rightfully so.

By all reasonable measures the wireless sector is performing admirably and in so doing is providing a compelling case that past policy determinations to minimize

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[46] For example, see Jerry Ellig, Costs and Consequences of Federal Telecommunications and Broadband Regulations, Mercatus Center, George Mason University, February, 2005 (and references cited there); and Jerry A. Hausman, Ariel Pakes and Gregory L. Rosston, "Valuing the Effect of Regulation on New Services in Telecommunications," *Brookings Papers on Economic Activity, Microeconomics*, Vol. 1997, 1997, pp. 1-54, The Brookings Institution, http://www.jstor.org/stable/2534754.

[47] Larry F. Darby, "*Ex Post* v. *Ex Ante* Regulatory Remedies Must Consider Consumer Benefits and Costs," The American Consumer Institute, May 14, 2008.

[48] NOI at para. 42.

intrusive regulations have been well founded and substantially rewarded by performance in the marketplace. In contrast to contention over relative wireline performance vis-à-vis that in other countries, there is no basis for contesting the superior performance of the wireless sector. According to Merrill Lynch, price per minute of use by U.S. consumers is the lowest of twenty six OECD countries; U.S. consumers have the highest monthly usage rates of those same countries; and, as measured by standard indices, the U.S. market is competitively structured and enjoys the lowest Herfindahl concentration index. This is consistent with other findings that U.S. wireless markets have the second lowest prices and had the highest penetration rates in the world, which translates into the highest in consumer welfare benefits.[49]

Consumers can choose from numerous different handsets (630 by one count); thousands of applications for those handsets; and, from almost three dozen different manufacturers. On the broadband front, the U.S. has more (in percentage and absolute terms) consumers using mobile Internet capabilities than countries surveyed by Nielsen.[50] In short, as indicated by these and other indicators of industry performance, the wireless sector is the source of growth, innovation, competition, and dramatically increasing consumer welfare.[51] Thus, the Commission's emphasis on wireless promotion as an element of the NBP is well founded.

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[49] Joseph P. Fuhr, Jr. and Stephen Pociask, "Comparison of Structure, Conduct and Performance: U.S. versus Europe's Wireless Markets," *A Collection of Essays on Infrastructure versus Service-Based Competition: The Case of Mobile Telecommunication*s, Laurent Benzoni and Patrice Geoffron (eds.), Quantifica, Paris, France, 2008.

[50] See, "The United States and World Wireless Markets: Competition and Innovation are Driving Wireless Value in the U.S." Letter filed with Ms. Ms. Marlene H. Dortch, Secretary, in re: *Ex Parte* Communication, RM-11361; GN Docket No. 09-51; WC Docket No. 07-52, May 12, 2009, p. 2.

[51] We can cite no more persuasive, authoritative source for this conclusion than the Commission's own findings published earlier this year. *See, e.g. In re* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Thirteenth Report*, WT Docket No. 08-27, DA 09-54, at ¶ 1-2 Jan. 16, 2009.

In its Wireless Terrestrial Rural Report and Order, the Commission adopted measures designed to allow carriers greater market discretion, to reduce regulatory costs of providing service to rural areas, to promote access to both spectrum and capital resources and to improve provision of rural wireless services.[52] In the current NOI, the Commission requested comment on numerous issues. We have selected four for comment..

More Spectrum is Needed to Enable Wireless Broadband Development. There is little doubt that the current trajectory of wireless usage combined with increments of broadband capability will in the near term exhaust spectrum currently assigned for mobile carrier use.[53] No question about if, only about when and how severe will be the impact on consumers. We cannot emphasize strongly enough the importance of identifying quality spectrum that can be used for wireless broadband; of taking immediate steps to clear and otherwise make it available and suitable for mobile broadband; and of providing administrative measures designed timely to make it available through public auction consistent with past practices.

Spectrum Awards Should Rely on Markets and Accord Licensee Flexibility. The Commission sought comment on "…different regulatory approaches…that can assure

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[52] *See Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services; 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services; Increasing Flexibility to Promote Access to and the Efficient and Intensive Use of Spectrum and the Widespread Deployment of Wireless Services, and to Facilitate Capital Formation*, WT Docket Nos. 02-381, 01-14, 03-202, Report and Order and Further Notice of Proposed Rule Making, 19 FCC Rcd 19078 (2004) (*Wireless Terrestrial Rural Report and Order*).

[53] A recent study of demand for mobile broadband services concluded: "There are a number of market factors that are acting together to increase spectrum demand at an accelerating pace, including more mobile life and work styles, greater device sophistication, new bandwidth consuming applications, an increasing percentage of mobile users taking advantage of data applications, and ongoing industry innovation. Furthermore, for mobile broadband networks to provide a credible alternative and complement to wireline networks, they must be able to maintain pace with respect to performance and capacity. Mobile broadband networks can only meet these needs with the timely addition of new spectrum. Given the long timeframes involved in going from planning to auction to deployment, as experienced with the AWS and 700 MHz bands, planning for new spectrum should begin as soon as possible." Rysavy Research, Mobile Broadband Spectrum Demand, December 2008, p. 2, available at: http://files.ctia.org/pdf/FINAL_Rysavy_Spectrum_Demand_[1].pdf.

efficient and effective access to broadband…" [54] as well as suggested "…approaches for spectrum allocation, assignment, management, and uses that will best promote national access to broadband."[55] The Commission has historically provided licensees with exclusive rights to use (within very broad regulatory parameters regarding mainly interference) the air waves in ways consistent with carrier business plans, technological preferences, and estimates of consumers' desired or preferred service configurations. In doing so the Commission has respected the enormous scholarly writing on the matter and has been rewarded by the high levels of performance cited at the beginning of this section.[56]

Buildout Obligations Are Not Needed, Inefficient and Raise Investment Risk. The impact of buildout requirements reflects unintended consequences of well meaning regulations. The basic notion is that buildout requirements will accelerate network development. Capital budgets of operators are not random or capricious. They reflect considerations that will lead to the greatest consumer value for a given capital expenditure. Government efforts to force operators to invest faster, or in places, or to provide services that they would not choose may lead to some marginal benefits for some users, but come at substantial opportunity costs of benefits foregone by other users. Buildout requirements are a form of tax borne by investors and some classes of users to underwrite subsidies to others. Buildout obligations, embedded in licenses to be

[54] NOI at para. 43.

[55] NOI at para. 44.

[56] The list of supporting authorities is long and historic. See, for example, the classic reference by Ronald Coase, "The Federal Communications Commission," *Journal of Law and Economics*, vol. 2, 1959. Also, Arthur S. De Vany et al., "A Property System for Market Allocation of the Electromagnetic Spectrum," *Stanford Law Review*, vol. 21, 1969, p. 1499; Douglas Webbink, "Radio Licenses and Frequency Spectrum Use Property Rights," *Communications and the Law*, vol. 4, 1987; Gregory Rosston and Jeffrey Steinberg, "Using Market-Based Spectrum Policy to Promote the Public Interest," *Federal Communications Law Journal*, vol. 50, 1997, p. 87; Thomas Hazlett, "The Wireless Craze, The Unlimited Bandwidth Myth, The Spectrum Auction *Faux Pas*, and the Punch line to Ronald Coase's *Big Joke*: An Essay on Airwave Allocation Policy," *Harvard Journal of Law and Technology*, vol. 14, 2001, p 335; and Gerald Faulhaber, "The Future of Wireless Communications: Spectrum as a Critical Resource," *Information and Economic Policy*, vol. 18, 2006, p. 256.

auctioned off, reduce the value of those license and revenue derived by government there from, while increasing risk and the cost of capital for investors.

State and Local Regulations Raise Costs and Delay Services to Consumers. Zoning restrictions at the state and local level are serious impediments to expansion of wireless networks in rural areas. Environmental reviews and other processes associated with tower siting are unduly long, contentious, and uncertain as to outcome. The processes apply to new sites as well as modifications to existing ones. The result is delay, increased carrier cost (using funds that otherwise could have been committed to productive infrastructure), and reduced consumer welfare reflected in slower network adaptation, less innovation, and higher costs.

The Commission should advise the Congress of this serious barrier to the growth of broadband wireless networks and suggest amendments to the Communications Act that will impose limits on the ability of state and local governments to impose unreasonable restraints on wireless broadband development stemming from arbitrary and time consuming review processes. At a minimum, Congress should impose ceilings to define reasonable time constraints for state and local decision makers.

IX. STATE AND LOCAL TAXATION UNDERMINES BROADBAND INVESTMENT AND ADOPTION

In several places in the NOI the Commission invites comments on matters for which a discussion of current tax treatment of broadband networks is not only germane, but indeed obligatory. The Congress and Commission's concern for enabling the buildout of broadband networks;[57] nationwide broadband deployment;[58] ensuring broadband access;[59] and, deployment of advanced telecommunications capability,[60] for

[57] NOI, para. 1.

[58] NOI, para. 6.

example, all call attention to the central role of network investment in the discussion of a NBP. Elsewhere, the Commission explicitly addresses how policies will or will not encourage investment,[61] and also the specific role of the presence or absence of tax incentives.[62]

There is no denying the enormous pressure on state and local officials grappling with budget deficits borne of spending plans accelerated during the boom years and recession driven decline in tax revenues. The result is a conflict between short term pressures to close deficits and grow services while also providing longer term incentives for economic growth and development. Tax policies and practices at all levels of government create enormous conflict with even minimal requirements of a coherent, investment oriented NBP. A common sense principle, "Do Not Tax What You Want to Encourage," is violated haphazardly in numerous state and local jurisdictions.[63]

Broadband Taxes Are Two Edged Swords. Taxes cut the ability and willingness of operators to invest, by reducing expected cash flow and earnings, while also reducing the willingness of consumers to subscribe by raising prices and reducing expected functionality of networks. Traditional tax incidence theory holds that the impact of a tax on sales will be divided between supply-side and demand-side impacts in accordance with the relative price elasticity of demand that is the responsiveness of consumers to price changes. The more sensitive consumers are to price the greater will be the dampening effect on consumers and the greater will be the burden shifted back to

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[59] NOI, para. 9.

[60] NOI, para. 110.

[61] NOI, paras. 43, 50, 95-6.

[62] NOI, para. 37.

[63] For and extensive and detailed discussion broadband tax burdens; conflicts they create with other policy directions; and, the implications for national economic development, see Larry F. Darby and Joseph P. Fuhr, "Investing in Economic Growth: Broadband Network Tax Forbearance," *Media Law and Policy*, vol. 18, no. 1, 2009, pp. 1-43.

suppliers in the form of lower revenues, higher costs, and less cash. If consumer demand is highly inelastic and their willingness to buy the service is relatively independent of price, then a tax will be fully passed forward to consumers. In any event, the tax will reduce consumer welfare directly by forcing consumers to pay more. To the extent that some of the tax is borne by suppliers in the form of higher costs and reduced cash flow, consumers are still burdened indirectly and over a longer period of time by the reduction in investment and consequent lessening of network availability. A similar analysis applies to taxes on investment or property or value added or other tax bases.

Broadband Taxes Are Based on Obsolete Rationales. The current structure of taxes imposed by state and local governments is an artifact of a bygone age of monopoly power among broadband suppliers granted and protected by government. Historically, taxes on networks that are increasingly oriented toward provision of broadband services were in substantial measure a quid-pro-quo for grants of privilege and protection of market power. The assumed existence of monopoly rents generated by government favor to be shared by extraordinary levels of taxation is no longer valid. Government-based entry barriers and other protectionist measures have for the most part yielded to efforts to promote competition by eliminating those barriers. Nonetheless, state and local jurisdictions persist in looking to broadband platforms to make supernormal contributions to state and local budgets.

Broadband Taxes Are More than Twice the Average for other Services. Taxes on broadband services platforms and the main engines for expansion of broadband services are substantially higher than for retail sales more generally. A recent study estimated that taxes, from all levels of government, on telephone and cable television subscribers exceed 13%. That rate is roughly twice the study's estimate (6.61%) of the average general sales tax paid on other goods.[64] These taxes are not only excessive, they are also

[64] David Turek, Paul Bachman, Steven Titch and John Rutledge, "Taxes and Fees on Communication Services," The Heartland Institute, May 2007, p. 2 and p. 41. In some cities the rate for cable subscribers exceeds 20%; the rate for telco subscribers often exceeds 25% and reaches more than 30% in some U.S. cities; and, the rate for wireless services is frequently above 15% and has reached more than 20% in one city. The average household might save over $10.00 per month ($125.76 a year) if taxes and fees on cable television and phone calls reflected the same general sales tax rates imposed on clothing, sporting goods,

regressive inasmuch as they fall more heavily on poor and otherwise disadvantaged citizens. This fact is the result of taxes on transactions which are the same irrespective of income. A "poor" telecom or broadband subscriber pays the same amount of tax per dollar spent, but a larger share of disposable income, relative to more well-to-do subscribers.[65]

Conflict with an Array of Broadband Promoting Initiatives. Current tax practices conflict sharply with concurrent subsidy arrangements embedded in sundry state and local government programs.[66] A survey of state and Federal Broadband "assistance" policy initiatives indicates that all states and the District of Columbia have taken measures to promote broadband development. Twenty-two states offer grants to support

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and household products – some of which are not taxed at all in many states. Taxes and fees on telephone calls and cable TV are often equal to, or surpass, "sin" taxes on "public nuisance" goods like liquor and tobacco that impose significant costs on society. Tax experts estimate that taxes and fees paid by the average wireline telephone subscriber are higher than the average tax on beer in numerous U.S. cities. In one city (Jacksonville, Florida), taxes and fees on wireline phone service exceed taxes on beer, liquor, and tobacco.

[65] A recent study of telecom taxes concluded: "Taxes and fees on communication services are regressive with respect to income: their rate as a percent of household income declines as household income rises. A family that earned the upper limit of the lowest quintile of households in the country ($24,780) and paid the average amount in communication taxes and fees ($249.24) shouldered a tax and fee burden of about 1.0 percent. A household that earned the median average income ($44,334) and paid the same amount in communications taxes and fees paid only half as much, about 0.56 percent, of its annual income. A household in the top income quintile, earning $173,640 a year, paid an effective communication tax rate of only 0.14 percent, about one-tenth the rate paid by low-income households. Ibid, p. 25.

[66] The National Governors' Association has made clear its awareness of the highly leveraged role of modern telecom infrastructure in raising economic welfare of citizens. "A modern communications infrastructure that provides high-quality, reliable, and affordable communications services is essential to the economic competitiveness of states and the nation. Recent technological advancements in communications services are fundamentally changing the manner and means by which consumers communicate with one another. These changes have led to the development of new services, greater competition, and increased consumer choice. Technological advancements also pose challenges for states, which generally tax communications services based on the technology used to provide the service rather than the service itself. Left unchanged, these laws will create inequities between competing service providers and diminish state communications tax bases as new technologies evolve beyond existing laws. Governors support [development of] national guidelines for state taxation of communications services and service providers that encourage investment, innovation, and competition; preserve state authority; provide necessary resources; and advance the public interest." National Governors' Association "Policy Position." Available at:
http://www.nga.org/portal/site/nga/menuitem.8358ec82f5b198d18a278110501010a0/?vgnextoid=7de82ad998254010VgnVCM1000001a01010aRCRD

private sector deployment in underserved areas; seventeen offer grants to help underwrite investment and operations in rural areas; fifteen offer some form of tax incentive to broadband providers; seven offer loans to broadband providers; eight use various "universal service" mechanisms to promote broadband deployment; and four offer "general" grants to broadband providers.[67] A recent study of 52 selected municipally owned and operated local multifunctional, broadband networks have absorbed over $842 million in taxpayer funds over a twenty-year period. Over three-quarters of those are still drawing on taxpayers to fund ongoing operations.[68]

These state and local subsidy initiatives are cascaded on top of a variety of federal programs to stimulate broadband technology. The largest is the Federal Universal Service Fund (USF) administered under provisions in the Telecommunications of 1996. That fund collected, from interstate service providers and disbursed mainly to high cost providers and to schools and libraries, $7.3 billion in 2006, while disbursing a total of $21.9 billion during the 1998-2006 timeframe. Not all of this was in direct support of broadband, but owing to changing technology and the needs of applicants to the USF, a substantial and growing share of it is fairly denominated as "government administered subsidy to broadband."[69]

Fundamental Conflict with National Broadband Stimulus Policies. There is little basis for doubting the inconsistency of current tax practices in state and local jurisdictions with any reasonable construct of a NBP. The presence of substantial and widespread externalities (external benefits in particular) associated with broadband networks are well known. State and local network broadband facilities and services

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[67] Scott Wallsten, "Broadband Penetration: An Empirical Analysis of State and Federal Policies," Working Paper 05-12, Jun 2005, p. 19. See http://www.aei-brookings.org/publications/abstract.php?pid=949.

[68] Sonia Arrison, Dr. Ronald Rizzuto, and Vince Vasquez, "WiFi Waste: The Disaster of Municipal Communications Network," Pacific Research Institute, February 1, 2007, p. 1.

[69] A general description and details of the Universal Service Fund administered by the Universal Service Administrative Company (USAC) is available at: http://www.usac.org/about/universal-service/fund-facts/fund-facts.aspx.

confer substantial value to residents of states and communities where they are located, but the value of broadband is unquestionably national in nature. Indeed, the national nature of broadband networks is the very foundation of the need for a NBP and the impetus for this proceeding. The presence of externalities means that the costs and benefits of broadband taxes and other policies are not bounded by reach of specific taxing jurisdictions, but are shifted to and borne in significant part by citizens in other locations and tax jurisdictions. There are substantial local and state interests in broadband services. These must be respected. But, so too is there a substantial, unquestioned national interest in broadband development. That national interest cannot be pursued to the extent that it is hindered by exercise of tax policies and principles followed by nonfederal jurisdictions.

Viewed in the aggregate, state and local taxation of broadband networks a) is excessive and discriminatory, b) is patently inconsistent with any reasonable construction of a NBP, c) is based on old economic, technological and public policy models, d) conflicts with other state and local regulatory and spending practices designed to encourage broadband investment and adoption and e) fails to reflect the essential nationwide character of interconnected broadband networks.

It is clear that the effectiveness of any stimulus to broadband investment and adoption forthcoming from NBP initiatives will be offset in substantial part by the current state and local tax structures, as well as potential future tax increases now being considered in several jurisdictions.

What Is To Be Done? Principles and practices of Federalism come into play when attempting to reconcile state and local government practices that conflict with national interests. Clearly needed is a national framework or national perspective for considering the merits of state and local taxation of broadband networks. Much of the rationale for the Internet Tax Moratorium comes into play here as do the arguments offered by state

and local officials opposing it.[70] Synchronizing conflicting federal, state and local tax practices will no doubt involve the same sort of debate and many of the same arguments. That said, it is important that the debate begin.

X. PRODUCT, SERVICE AND RATE DIFFERENTIATION ARE CRITICAL TO SATISFYING USER NEEDS AND MAXIMIZING CONSUMER WELFARE

A major advantage of enterprise economies over planned ones features the genius of the former in offering users a variety of options featuring different combinations of service characteristics, bundles, and prices from which end users may choose. This sort of service differentiation, rate differentiation and service clustering or tiering is a dominant and valuable feature of the menu of choices availed consumers throughout the economy, as well as in the information and communications technology goods and services sector. Consumers' tastes, abilities to pay and willingness to pay are varied. Those facts demand that producers be permitted and encouraged to identify those differences and to tailor offerings in ways designed to satisfy individual and group preferences. Indeed, a widely cited failure of planned economies has been their inability to tailor output to different tastes, while settling instead for "One size fits all!" configurations of output.

In this context, of all the issues and questions raised in the Notice, none is more critical to the shape and pace of development of timely, universal, efficient access to broadband networks and services than the question of how broadband network services may be defined, packaged and priced -- and according to what if any regulatory constraints. In simplest terms, shall differences and experimentation and attempts to tailor terms of service offerings to real differences in user preferences and willingness to

[70] President Bush signed Bill (H.R. 3678) extending a Clinton Administration Moratorium on taxing online commerce. The "Internet Tax Freedom Act Amendment Acts of 2007," prohibits multiple and discriminatory taxes on electronic commerce until Nov. 1, 2014.

pay be encouraged, or will those be throttled by well meaning efforts to promote "neutrality" or "fairness" or "openness" or another ambiguous objective?

Of special interest here is how the Commission shall address concerns about price "discrimination" by firms in the Internet Value Cluster: broadband access suppliers in particular, but certainly not exclusively. The Commission asked a series of questions focused on a principle of "nondiscrimination," beginning with the very important direction for respondents to begin with a definition, then proceeding to invite comment on the implications of adopting or not adopting a nondiscrimination principle. The Commission pointedly focused on a workable, enforceable definition of discrimination.[71] In asking the question the Commission is signaling its appreciation of the fact that as a matter of rational public policy, it is absolutely imperative for the Commission to define clearly that term in the context of both deciding whether or not to adopt "principles-based" regulations and if so what kinds of regulations to adopt.

The Commission has set for itself a difficult but necessary task. The following description of controversies over discrimination is instructive:

> *In contemporary public discourse, the notion of discrimination is thoroughly muddled. The chaos stems not only from partisan manipulation but from ambiguities in the concept itself. The most common definitions of "discrimination" contradict each other, and individuals often switch from one definition to another.*[72]

The passage might very well have been directed to the structure of rates for broadband Internet access in the context of the debates over "net neutrality," "open networks," "Internet Freedoms," and the like, but the author was in fact addressing

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[71] NOI, para. 48.

[72] Curtis Crawford, "Discrimination: A Clear and Consistent Definition," April 2002. An earlier and slightly different version is available as "Rescuing the Concept of Discrimination" in Academic Questions vol. 14,, no.3, Summer 2001.

discrimination not in terms related to the economics of markets, but in the socio-cultural context of race, religion, national origin and/or sex.

An Operational Definition of Discrimination is Imperative. It is indisputable that any nondiscrimination principle must be specific, clearly understood by all parties, and enforceable with a minimum of public resources.[73] Failure to define clearly the line between acceptable conduct is an invitation to litigation, delay, ambiguity and relentless gaming of regulatory processes for commercial gain.[74] Given the ambiguities, vagueness, and different perceptions associated with the term "discrimination," defining it for policy guidance and enforcement purposes is a very demanding undertaking. There are numerous conceptions and definitions of discrimination. Advocates frequently reflect very negative notions and connotations of price discrimination.[75] But, discrimination is a value laden term. Stripped of cultural, socioeconomic and political context, its literal

[73] In addition to soliciting comments on discrimination, the Commission also invited parties to provide analyses on openness, open platform innovation, open network policy and open network principles (para. 48). We are hard-pressed to respond to these requests, as will be many other respondents, since they are not definitive. The terms are widely used by the Commission and by advocates of all stripes, but most of the discussion is rhetorical, rather than analytical; argumentative, rather than informative; open-ended, and not given to conclusive resolution. Terms like openness, neutrality, end-to-end, freedoms and the like, when applied to networks are not just vague, but as used in recent years by many advocates, value-laden and ultimately vacuous. Terms relating to openness are alternatively empty of content or so full of it that they can mean anything. Either way their continued use by the Commission not only invites, but impels, stakeholders and advocates to waste time and resources debating issues that cannot be resolved on their own terms. Different parties will have different constructs for the term. The term invites more rhetoric and provides no basis for reasoned analysis. The Commission would do well to narrow and focus the terms of the debate by insisting, then following its own admonitions, that parties be clear about the content, bounds, four corners, of notions of openness they oppose or support and that the Commission might usefully refine the terms of its inquiry in this area.

[74] Commissioner Copps recently charted the right direction when he called for "a specific principle of enforceable non-discrimination, one that allows for reasonable network management but makes clear that broadband network providers will not be allowed to shackle the promise of the Internet in its adolescence." Statement of Commissioner Copps in Adelphia Proceeding.

[75] One writer observed the power of words and terminology as follows: "The term *price discrimination* has been used to vilify its practitioners since the term's inception in economics. Price discrimination is considered evil because discrimination is considered, in most contexts, as evil. If instead we described this common phenomenon as *price distinction* instead of *price discrimination*, the general field of thought on the matter would, most likely, be extremely different. If a producer engages in 'distinguishing' prices instead of discriminating prices, the world would be a more rational place, because economic discrimination is so often socially beneficial." Leonard Waverman, "Comments on Network Neutrality," *Journal of Competition Law and Economics*, vol. 2, no. 3, pp. 475-77.

meaning is benign. It refers to acts involving differentiating, distinguishing, discerning, comparing, etc. as part of the process of choosing courses of action. It is a necessary part of all choice. In its best sense it refers to skill in perceiving, discriminating, or judging with reliance on acumen, astuteness, clear-sightedness, discernment, keenness, perceptiveness, percipience, percipiency, perspicacity, sagacity, wisdom, shrewdness. In its worst sense it refers to behavior growing from exclusionary purposes or desire to deny based on political or personal values not shared more generally.[76]

Discrimination May be Defined Broadly as any Different or Unequal Treatment. On its face this definition is purely descriptive and largely value free, but it is clearly too imprecise and would prohibit any choice based on reasoned discernment and differentiation. A less restrictive definition would allow, some, but not all forms and occasions of discernment and differentiation. Since differentiation and discernment are necessary parts of choice, they are both rational and beneficial aspects of economic behavior. However, some differentiation is good, some not. The Commission's chore is to find a way to "differentiate between good differentiation and bad differentiation" and it can only do so by conceding at the outset that continuing the debate in terms of value laden terms like "discrimination" and "neutrality" will invite, nay impel, reliance on rhetoric rather than analysis. The importance of a careful definition of discrimination is made manifestly and abundantly clear by the fact that price discrimination (differentiation if you prefer) of one form or another is not only acceptable, but is common, laudable and indeed necessary in a broad array of economic and market contexts.

Discrimination, Per Se, Is Neither Good Nor Bad. It can only be evaluated in terms of its impacts in the context of social, political and economic norms. So it is with business behavior – prices, terms of service, quality of service, etc. -- that differentiates

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[76] Standard dictionary definitions indicate the range and reach of different perceptions of "discrimination", but are not very helpful beyond that. See, for example, http://www.m-w.com/dictionary/discrimination; http://www.yourdictionary.com/ahd/d/d0263200.html.

across customers, input suppliers, and cooperating agents in the supply chain. The Commission's task in this proceeding is to fashion clear rules that sharply and reliably differentiate between carrier behavior that serves long run consumer interests (by adding to the present value of total consumer welfare) and carrier behavior which does not.

By whatever designation – differentiation, discrimination, variation, or other terminology – the Commission's focus should be on the impact of associated business practices on overall consumer welfare as defined in Section III. Thus, a business practice that treats some users differently from others cannot be proscribed *per se*, but must be evaluated by a rule of reason that weighs heavily the impact of the practice on consumer welfare. The Commission's first and necessary task is to cut through the semantic chaos and to define the term in a way that clearly and unambiguously divides acceptable from unacceptable firm conduct. That done, it should inform its own decisions and advice to Congress with facts described in what follows.

The Commission Has Long Permitted and Encouraged Rate Discrimination. Rate discrimination issues are not new to the Commission. Much of the history of rate structure regulation has been Commission prescription of certain forms of rate discrimination (business v. residential users, urban v. rural users, local v. long distance services and others) as means for advancing public policy goals. There is substantial historical precedent favoring some kinds of discrimination and attempting to prohibit others in its efforts to interpret and enforce Section 202 of the Act which allows for and encourages discriminatory rates, while requiring the Commission to "discriminate" between those that are just, reasonable and fair and those that are not.[77] Thus, seventy-five years historical regulatory precedent (since at least 1934 Communication Act) weighs strongly against simple per se rules banning rate differentiation or discrimination.

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[77] Section 202 of the Act provides: It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage. (Emphasis added)

Price Discrimination is Everywhere in the U.S. Economy. All choice – business and personal -- is based on discrimination in the broad sense of discernment of differences among different courses of action and selection from alternatives based on those perceptions. Prices routinely vary across space and time, but also with respect to income, product quality/character, and buyer classes.[78] Construed as perceiving, identifying and evaluating differences, then eliminating/selecting from alternatives on that basis, discriminatory business conduct is everywhere.

Limiting price discrimination with respect to services provided by broadband networks would differentiate the sector from the rest of the economy and discriminate against selected suppliers in the Internet Value Cluster.[79] Price discrimination may be regarded as a two-step process involving separation of the market into "clusters" or "classes" of users and subsequent price differentiation among different clusters or classes. Prices may be further differentiated among users within a cluster or for the same user at different time periods or for different volumes. These clusters may be defined by a variety of different characteristics of potential buyers – location, age, income, time, (season or time of day), or others from a vast array of personal preference-related characteristics. A mixture of cost- and demand-based pricing is in American industry the exception rather than the rule. It has been variously called "value of service pricing," demand-oriented pricing, pricing "what the traffic will bear," "Ramsey" pricing and

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[78] There are costs associated with change in the "…characteristics content of a product" and price differences based thereon do not reflect discrimination. Such costs include "costs of product design and changes in specifications and of services offered." Given such costs there is no economic discrimination in reflecting them in respective prices. See Louis Phlips, *The Economics of Price Discrimination*, Cambridge University Press, Cambridge, 1981 pp. 5-6.

[79] "Price discrimination among buyers…is…routine," see Einer Elhauge, "Why Above-Cost Price Cuts To Drive Out Entrants Are Not Predatory—and the Implications for Defining Costs and Market Power," *Yale Law Journal*, vol. 12, 2003, p. 733; "Price discrimination is one of the most prevalent forms of marketing practice," see Hal Varian, Price Discrimination, *Handbook of Industrial Organization*, vol. 1, Schmalansee and Willig eds., North Holland, 1989 at p. 598; "Casual observation suggests that price discrimination is common in many industries…," see William Baumol, *Regulation Misled by Misread Theory*, AEI-Brookings Joint Center, 2006, p.1; and "…pricing structures designed to accomplish segmentation [among users and uses] are widely used…in the economy, " see Michael Levine, "Price Discrimination without Market Power," *Yale Journal on Regulation*, vol.19, no.1, Winter,2002, p. 2.

others. Such pricing is commonly recommended by management and marketing consulting firms, while also being a feature of graduate business school marketing courses.

Discrimination Pervades the ITC Sector. Price and services discrimination is practiced in one form or another and in varying degrees by most of the major suppliers of information and communications products and services.[80] Practices equivalent to so-called "access-tiering" are common in the IT sector as in most other sectors of the economy.[81] Shapiro and Varian identified several different forms of what they called product or service "versioning."[82] Cable television operators provide tiers; cable and telcos provide different kinds of bundles; software providers supply different features in differentiated packages to different users; on so on.

Discrimination Is Generally Required to Recover Fixed Costs. Some form of price discrimination (pricing based on demand factors) may be required to recover fixed and common costs. The greater the share of common costs in total, the greater is the

[80] "Versioning" is the term of art used to describe price variation among users in the IT sector. It was coined by Professor Hal Varian. Versioning refers to a form of quality discrimination in which sellers purposely structure output and market offers so as to provide different qualities/versions of a good which they then sell at different prices. The whole purpose of versioning it to encourage consumers to cluster themselves in different groups according to their respective willingness to pay thereby enabling sellers to tailor prices according to consumer demand differences. While the term is relatively new, the practice is not. And, the practice takes numerous different forms. See, Hal Varian, "Versioning Information Goods," *Digital Information and Intellectual Property*, Harvard University, January 23-25, 1997. Available at: http://people.ischool.berkeley.edu/~hal/Papers/version.pdf.

[81] The term "access-tiering" is used here in the same sense as suggested by Professor Lessig in testimony before the Senate Commerce Committee, namely: "By 'access-tiering,' we mean any policy by network owners to condition content or service providers' right to provide content or service to the network upon the payment of some fee." (Lessig testimony to Senate Commerce Committee, February 7, 2006 at p. 2.)

[82] Varian and Shapiro identified several characteristics that firms might differentiate as ways to offer different "versions." The included timeliness, complexity of user interfaces, convenience, resolution quality, speed of application, flexibility, capability or scope of use, features and functions, comprehensiveness of information, annoyance factors, and degrees of technical support. See Carl Shapiro and Hal R. Varian, *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press, Boston, 1998, p. 17. Variations on these are used by almost every company in the Internet value cluster including software companies, search based companies, equipment and components providers, online retailers, assorted applications providers and others. Indeed, it is virtually impossible to find a company that does not segment products/services/customers into versions to which different prices apply.

likely discrimination. Price discrimination is the necessary accompaniment to the existence of common costs – that is costs that are not "caused" by the production of any particular service or by serving any particular customer, but rather are attributable to the business as a whole and may be recovered in a variety of ways from different business segments.[83]

Economies of Scale and Scope; Presence of Small Incremental Costs Dictate Discrimination. In such circumstances it is well established in both economic principle and market practice that prices based on costs "caused" by the incremental use or user will not generate sufficient revenue to cover total costs and will therefore not be sustainable.[84]

> *"The classic prescription for economically efficient pricing---set price at marginal cost---is not relevant for technologies that exhibit the kinds of increasing returns to scale, large fixed costs, or economies of scope found in the telecommunications and information industries. The appropriate guiding principle in these contexts should be that the marginal willingness to pay should be equal to marginal cost. This condition for efficiency can be approximated using differential pricing, and will in fact, be a natural outcome of profit-seeking behavior."*[85]

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[83] Common costs are frequently regarded as overhead costs or fixed costs that do not vary with changes in quantity or quality of output. Individual product or service prices, when multiplied by the respective quantities sold, must be sufficient to cover the total costs of production – direct costs plus common costs. Most product/service prices are high enough to recover their associated direct costs. But, the amount of common cost recovered by each product or service (that is, the "contribution to common cost recovery") is dictated by the market – and, in particular, by the characteristics of the demand for individual products and services. Prices to some buyers will reflect a greater assignment of common costs and be higher than those for other buyers. "Ramsey" pricing, for example, recovers fixed costs from different users in accordance with the inverse of price elasticity of demand. See William J. Baumol and David F. Bradford, "Optimal Departures from Marginal Cost Pricing," *American Economic Review*, vol. 60, no.3, June 1970, pp.265-83.

[84] Most elementary and intermediate economics texts discuss this problem. Reference to the problem is common in proceedings involving regulated rates at the FCC and elsewhere.

[85] Hal Varian, "Differential Pricing and Efficiency," *First Monday P*eer Reviewed Online Journal, 1996 http://www.sims.berkeley.edu/~hal/people/hal/papers.html.

Price Discrimination Need Not Suggest the Presence of Market Power. The ability and incentive to discriminate with respect to price and terms of service do not establish the existence of market power.[86] "Price discrimination among buyers…is …routine even in highly competitive markets, including hotels, computers, automobiles, books, clothing, groceries, restaurants, telecommunications, and the vast range of other products that offer coupons, rebates, student or senior discounts, quantity discounts, or different prices at different times or places. Indeed, it is hard to think of industries without price discrimination..."[87] Price discrimination generally leads to greater output (than for single, uniform prices for uses and users) and contrasts sharply with the well known monopoly practice of restricting output in order to increase profits.

Price Discrimination Is Not Grounds for Pervasive Rate and Service Regulation. Presence of the ability, incentive and practice of rate and service discrimination by a network service provider is not sufficient grounds to warrant regulatory intervention in the price setting process.[88] Market segmentation and price differentiation among different clusters of use or user is a common means of competing throughout the economy. Price discrimination is not a "sign" of monopoly power and does not provide a principled consumer welfare basis for rate regulation. " Indeed, it is hard to think of industries without price discrimination…, even though most of these industries are highly competitive or contestable, and the firms in them earn zero economic profit (i.e., a normal rate of return)."[89] The characteristics of consumer demand are an integral part of efficiency judgments. Whether or not a particular policy is efficient cannot be based on cost considerations alone.

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[86] Michael E. Levine, "Price Discrimination without Market Power," *Yale Journal on Regulation*, v. 19, no. 1, Winter 2002. Accessed at: http://www.allbusiness.com/human-resources/1108194-1.html.

[87] Einer Elhauge, "Why Above-Cost Price Cuts To Drive Out Entrants Are Not Predatory—and the Implications for Defining Costs and Market Power," *Yale Law Journal*, vol. 12, 2003, p. 733.

[88] Ibid.

[89] Ibid., p. 733.

Market Segmentation and Differential Pricing Are Distinct Forms of Vigorous Market Rivalry. Classifying consumers and products, then differentiating prices accordingly is an integral part of the operation of market forces. In a wide variety of circumstances, "…it is the very presence of effective competition that forces discriminatory prices on the firm."[90] Uniform prices (that is prices that are not differentiated with respect to idiosyncratic demand characteristics associated with different uses and users) are NOT sustainable in most industry contexts. Put differently, competition requires price discrimination. "…in a broad range of market types and conditions, where consumers can be separated into distinct groups with different demand elasticities and in which the market's commodity cannot easily be resold by one group to another, market pressures will prevent any equilibrium at which the price is uniform. Not only will each firm be forced to adopt discriminatory prices, but each firm is likely to be forced to adopt a unique vector of prices, each of which is dictated by the market."[91] "…in highly competitive markets, firms may have no choice [but to practice price discrimination][92] Taken together the foregoing indicates not only that price discrimination is compatible with effective competition and economic welfare maximization, but that it may be the only sustainable structure of prices.

Price Discrimination Fosters Broadband Investment. Price discrimination has salutary financial effects inasmuch as it permits cost recovery, reduces risk, allows for the widest diffusion and use of services and thereby encourages investment and innovation. Some "uniform" pricing standards may well increase risk, limit the reach and scope of diffusion of services and would potentially lead to revenue shortfalls – all of which are serious deterrents to investment.

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[90] Baumol, p. 2.

[91] Baumol, pp. 2-3.

[92] Baumol, p. 3.

Price Discrimination Widely Permitted and Promoted in Regulated Utility Sectors.[93] We call attention finally to market performance in other "regulated" industries – surface transport, air transport, electric and gas utilities, pipelines, and circuit switched telecommunications – which suggests the presence of consumer welfare enhancing properties of price discrimination of the kind likely to evolve in markets for Internet access and use. The Commission should weigh heavily that experience and evidence in this proceeding.

The Commission Must Recognize and Assess the Cost of Regulatory Error. The Commission asked: What would be the impact of adopting a principle requiring nondiscrimination? What would be the result if the Commission chose not to adopt such a principle, or if its Internet Policy Statement principles were found to be unenforceable?

The impact of adopting or not a principle requiring nondiscrimination depends critically on the character of the principle and in particular, first, on the specificity with which it is defined and, second, on the content of the definition as it pertains to the kinds of market behavior allowed or prohibited. The first goes to regulatory certainty and the prospects for ambiguity, delay in subsequent legal proceedings and, most importantly, the likelihood that some beneficial behavior will be foregone by firms out of fear of prosecution. The second goes to what might be called the incidence and value of type one and type two errors – banning beneficial behavior vs. permitting that which harms consumers.

Important in this regard is also the nature of the enforcement of the principle; specifically, whether the regulatory regime is in the nature of *ex ante* or *ex post* enforcement.[94]

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[93] For a fascinating and detailed chronicle of acceptance and promotion of various forms of price and service discrimination in regulated industries, and its relevance for regulation of Internet access providers, see Andrew Odlyzko, "Pricing and Architecture of the Internet: Historical Perspectives from Telecommunications and Transportation." Available at: http://www.dtc.umn.edu/~odlyzko/doc/pricing.architecture.pdf.

[94] Broadband Connectivity and Competition Policy, FTC Staff Report, June 2007, pp. 155-162 for summary of recommendations http://www.ftc.gov/reports/broadband/v070000report.pdf.

Policymakers must recognize any rule is subject to error, in the sense that it will give rise to both false negatives (condemning good discrimination) and false positives (approving bad discrimination). In recognition of the inevitability of error, the goal should be to minimize the total expected value of errors. This requires careful analysis of harm from different errors. It requires trading off expected costs of different errors. There must be a willingness to let some bad behavior go unchecked in order to assure that good behavior is not discouraged.

All Elements of the NBP as it Relates to Price Discrimination Should Focus on the Welfare of Consumers in the Aggregate. More specifically, elements of a national policy to promote broadband: a) should focus on consumer welfare, b) should not be satisfied with dividing surplus among producers with modest attention to consumers and c) should drill down into representations by interested parties who make claims on behalf of consumers based on welfare assessments. The goal should be to maximize present value of total consumer welfare. Producers matter, but only to the extent that their welfare contributes longer term to consumer wellbeing. The goal also recognizes implicitly that consumer value accrues over time and that concerns for a particular consumer class are subordinate to group interests.

XI. CONCLUSION

The outcome of the processes launched with this NOI will likely rank among the most momentous in the Commission's 75 year history. The NOI itself is certainly among the most detailed and far ranging; the social and economic reach of the implications of a national broadband strategy are unrivaled by the subject matter of any previous FCC proceeding; and the proceeding is strategically timed amid one of the most challenging economic eras in our history. If the main subject matter of this NOI is what we believe it to be – defining and limiting the relative roles of government actions and market processes in spurring innovation, investment, and consumer welfare derived from

broadband networks and services – the proceeding is pivotal as well. The Commission will be obliged to evaluate carefully the historical results of its own conduct in regulating and deregulating telecommunications markets as means for choosing which course of action to pursue: stay the course, more or less, or change course in the direction of greater government participation in the day to day decisions of both producers and consumers. There is not a single dissenting voice questioning the enormous economic benefits that do and will derive directly and indirectly from growth in investment in broadband networks and proliferating use of broadband services. The findings of the Commission here and its recommendations to Congress hold the potential for propelling the momentum of broadband networks or for throttling them down with uncertainty, delay and administrative management borne of well meaning intentions. The economic welfare at stake is unprecedented in the Commission's history.